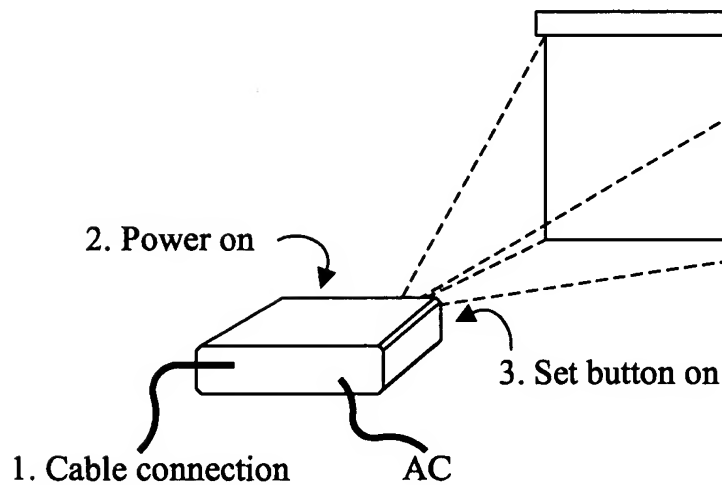


6-step procedure is required to project an image in the right way.
(Steps 3-6 are repeated to make right adjustment by confirming the results of adjustment each time)

FIG. 1 (PRIOR ART)



Setting free model enables right image projection by just pressing the power switch and set button.

FIG. 2

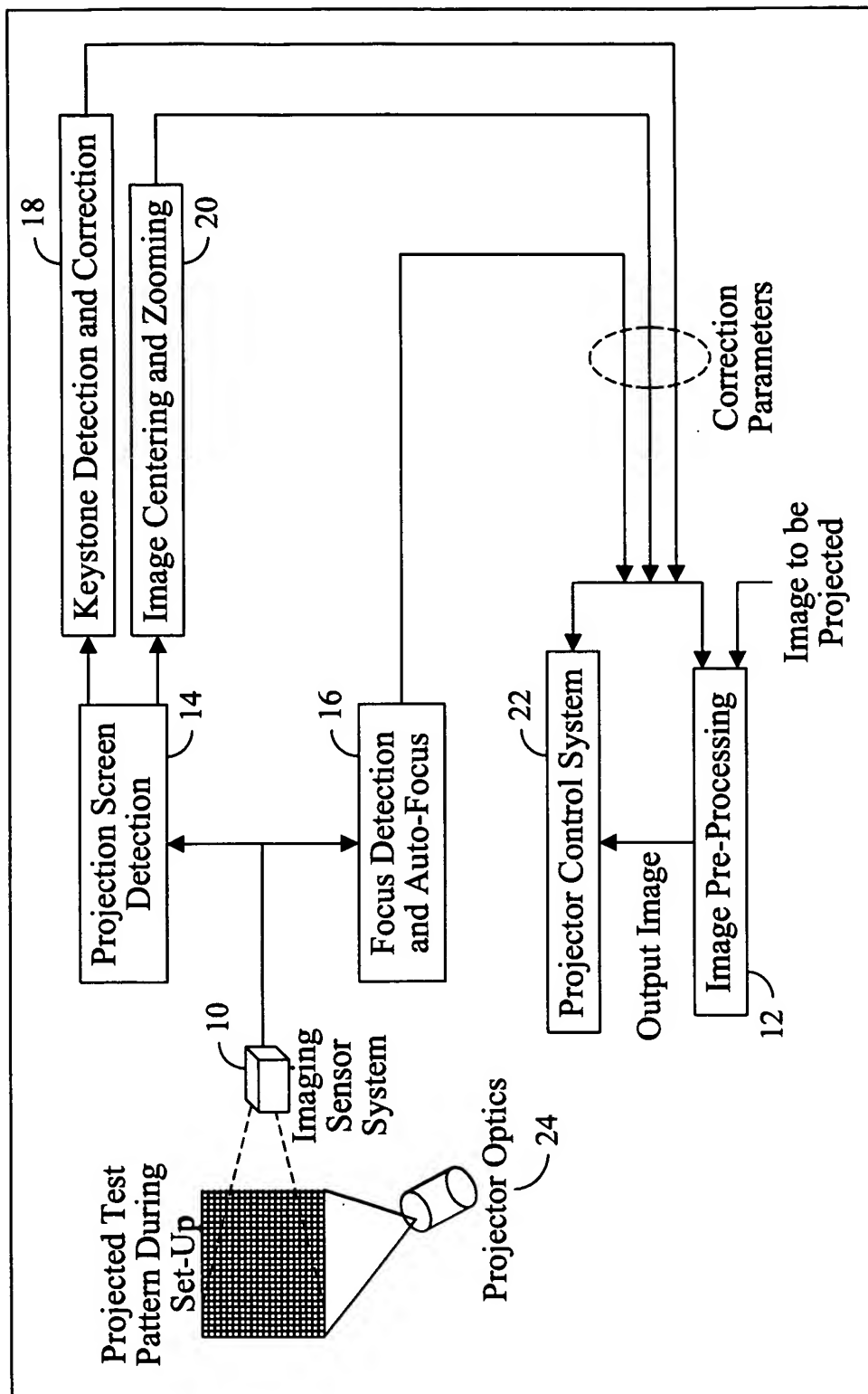


FIG. 3

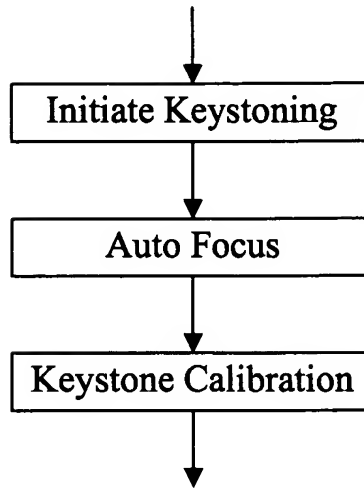
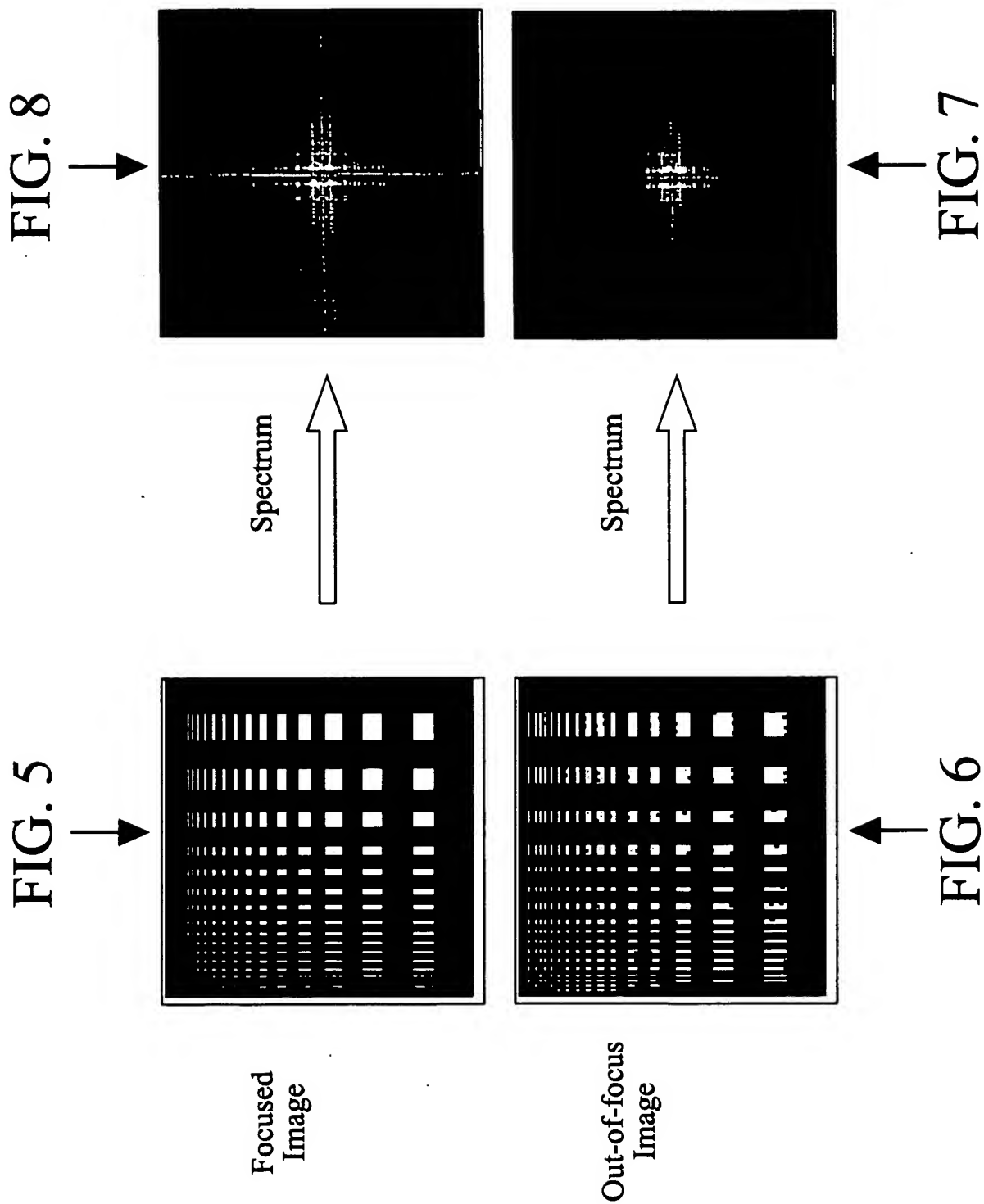


FIG. 4



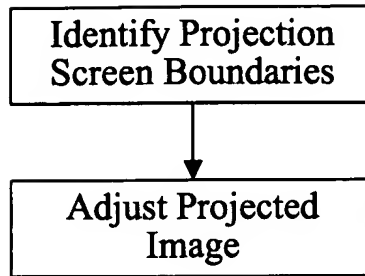


FIG. 9

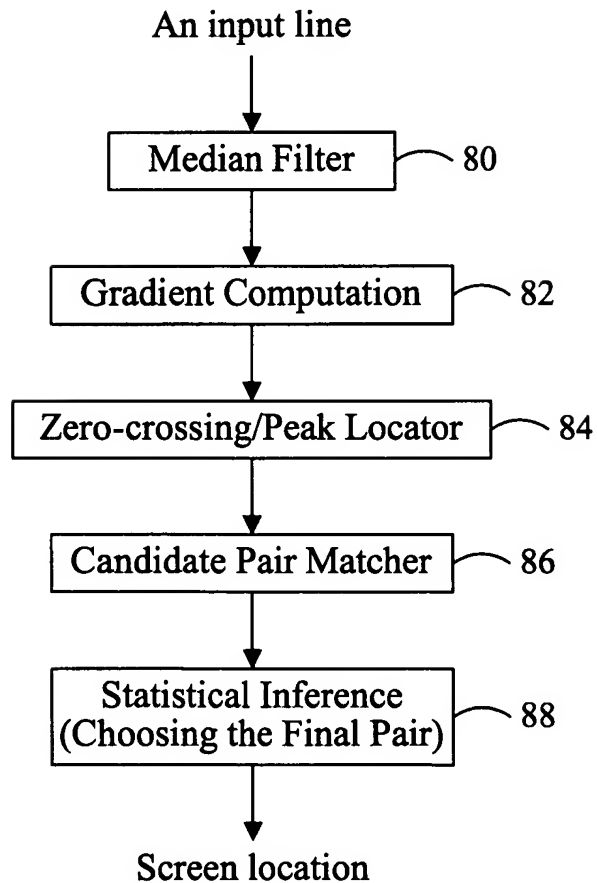
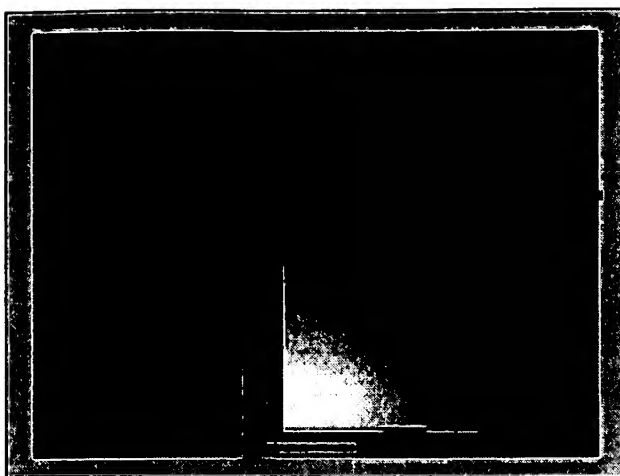


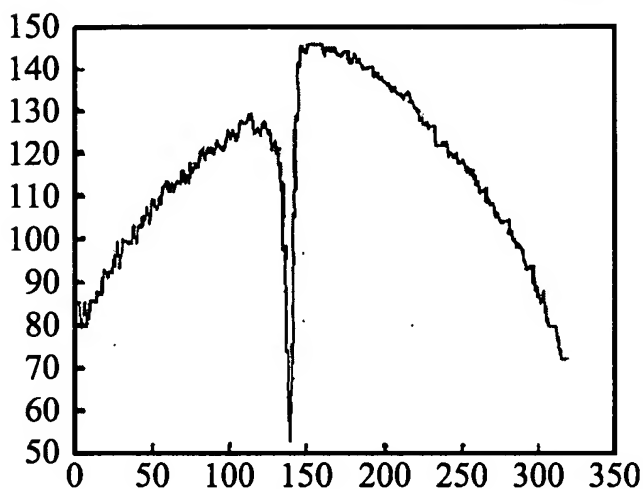
FIG. 10

(b)



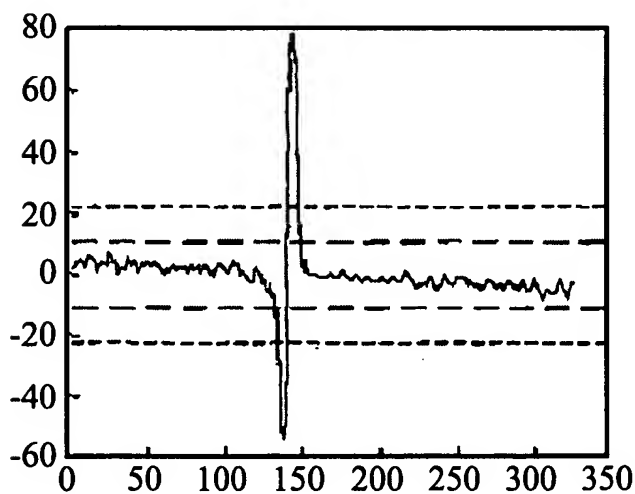
An image of the screen from the projector's perspective. The line is assumed to be the one row that the 1-D sensor can sense.

(b)



The luminance values of the row in (a), illustrating that working in the luminance domain there may be no region that is uniform (and thus is potential screen area).

(c)



The gradient of (b).

FIG. 11

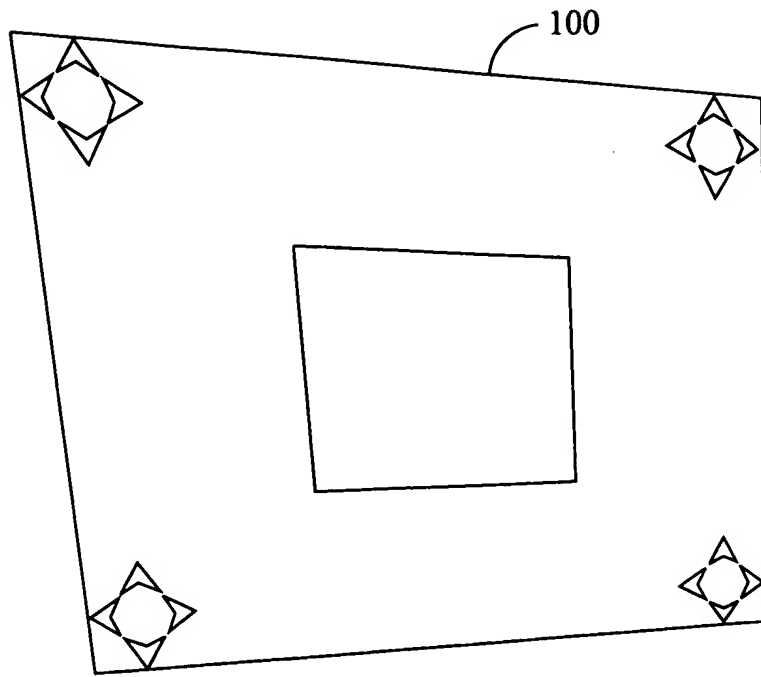


FIG. 12

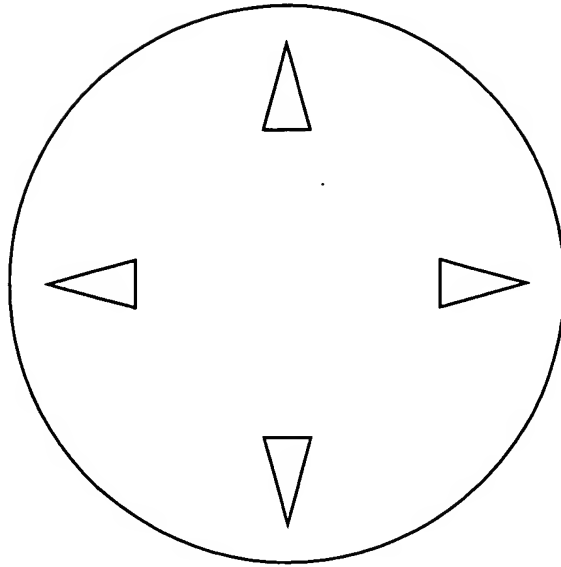
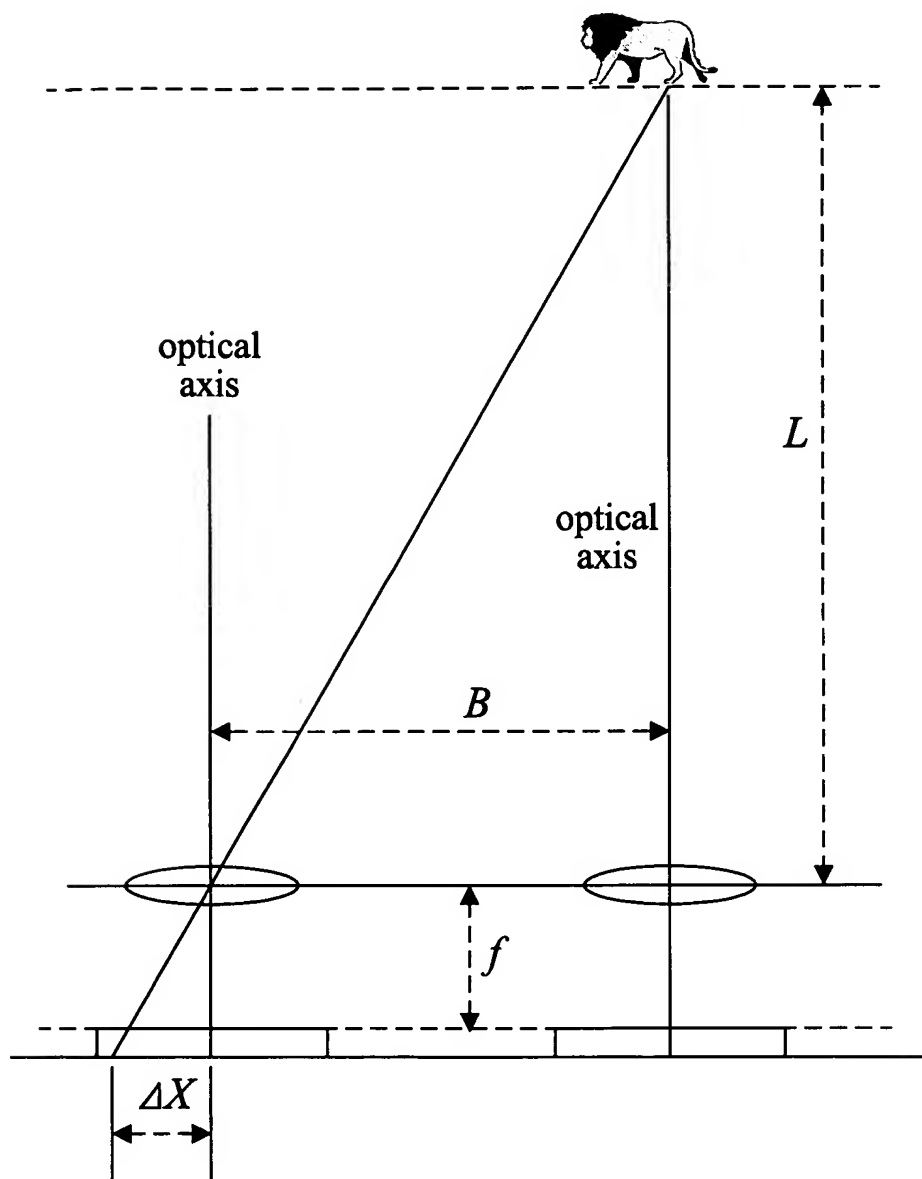


FIG. 13



Based on the similarity of the triangles, the distance L is computed as a function of the sensor parameters (B and f) and the disparity ΔX (difference between the two images of the same physical point):

$$L = \frac{Bf}{\Delta X}$$

FIG. 14

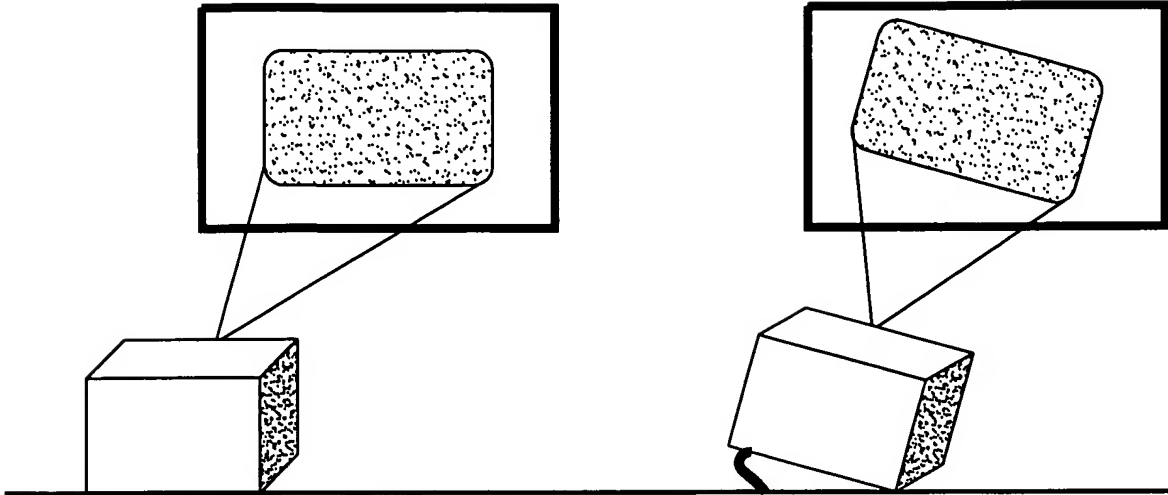


FIG. 16

FIG. 15

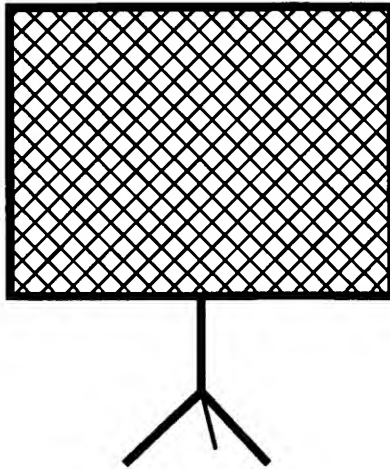


FIG. 17A

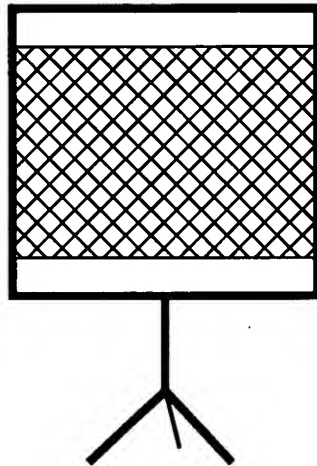


FIG. 17B

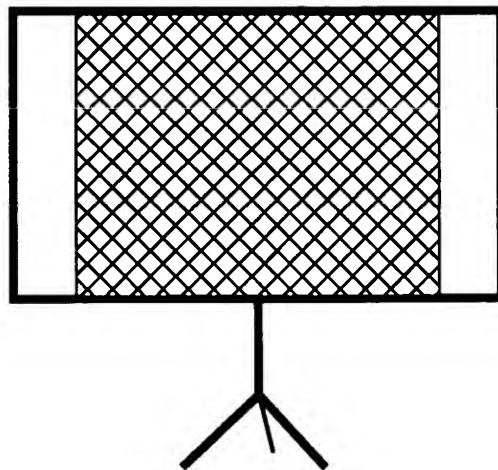


FIG. 17C

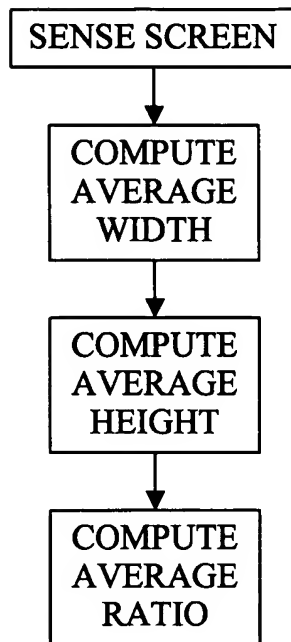


FIG. 18

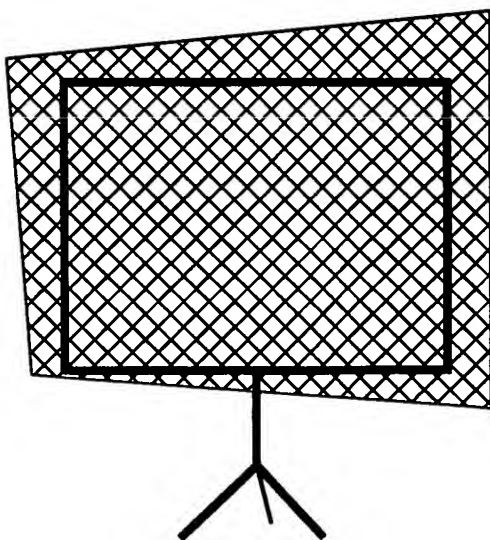


FIG. 19

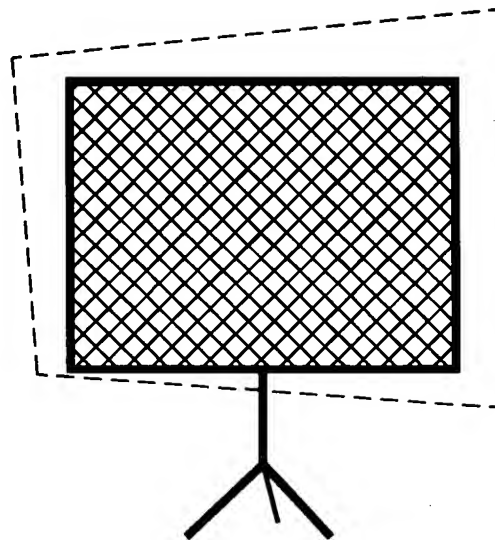


FIG. 20

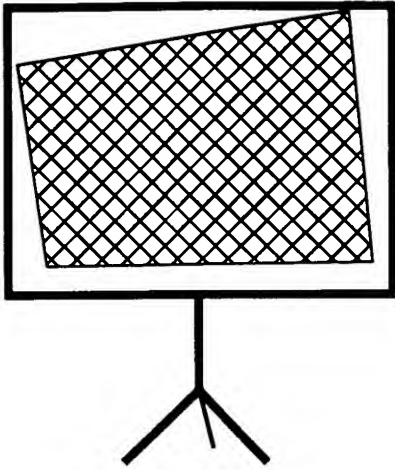


FIG. 21

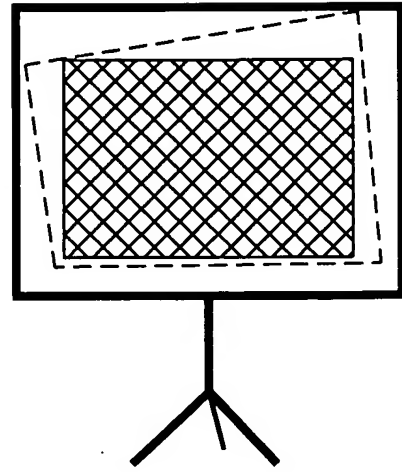


FIG. 22

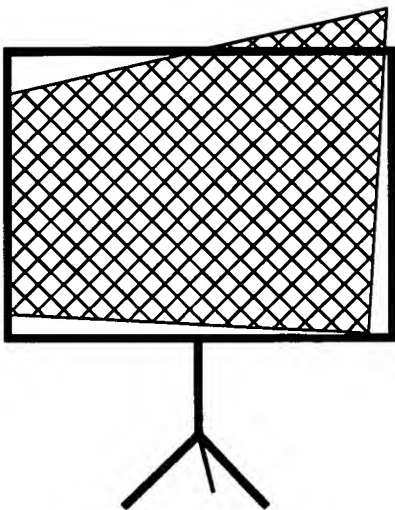


FIG. 23

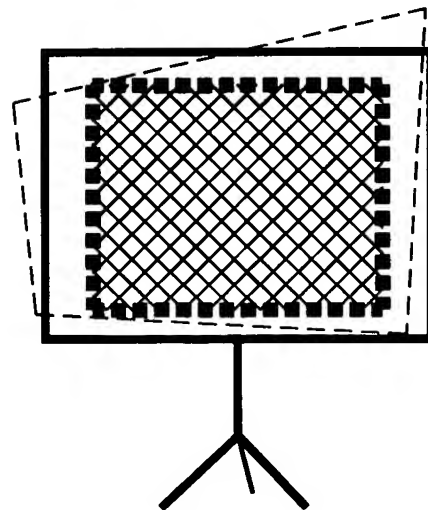


FIG. 24

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